Asia-Pacific Economic Cooperation

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**2003/SOMIII/ESC/006rev. 1**
Agenda Item : 4.2

# The Engagement Of International Financial Institutions (IFIs) In APEC's Knowledge-Based Economy (KBE) Activities

Purpose : Consideration
Submitted by : Thailand

**SOM Committee on ECOTECH**
**Phuket, Thailand**
**17 August 2003**

# THE ENGAGEMENT OF INTERNATIONAL FINANCIAL INSTITUTIONS (IFIs) IN APEC'S KNOWLEDGE-BASED ECONOMY (KBE) ACTIVITIES [*]

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## Abstract

This paper argues that modern economies in the increasingly globalised world must be able to make better uses of existing knowledge and technology, and able to adapt, adopt or generate their own knowledge or technical know-how in order to survive and prosper. But while various attempts to use various tools such as the Information and Communication Technology (ICT) to make the economy a knowledge-based economy (KBE), this knowledge should be made to lead to greater trade and investment, increased economic welfare and reduced poverty as well. It is through this KBE activities to increase trade, investment, welfare and reduce poverty that provide necessary linkage for APEC economies or its various forums such as the ESC to work with such international financial organizations as the World Bank, the Inter-American Development Bank, and the Asian Development Bank because these IFIs also have the same objective.

However, the existing concern of these APEC economies or forums is how to work together with these IFIs for the mutual support and cooperation of their activities. This is not difficult as these IFIs are reaching out to work more closely with other organizations or institutions having the same objectives. What have been undertaken within the APEC process may also have indirect impacts on poverty reduction such as the 2000 Brunei Declaration would aim at increasing the number of internet users in the less developed APEC region which could result in their ability to earn more income. Or the successful implementation of the 'E-APEC Strategy' which will strengthen market structure and institutions, and enhance human capacity building and entrepreneurship for better economic livelihood. APEC economies or forums may have to put more efforts on the use ICT to bring about increased economic welfare and poverty reduction through greater productive efficiency. The opportunity to engage the IFIs and to work more closely with them should enable the APEC process to reach the Bogor Goals in the APEC region more quickly.

## 1. Introduction

Since the year 2000, many innovative economic and technical cooperation (ECOTECH) activities have taken place under the initiatives, leadership, and supervision of the SOM Committee on ECOTECH (ESC). In 2001, for example, the ESC was able to encourage APEC members to

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[*] Revised version of the paper presented at the Third ECOTECH Committee (ESC) Meeting in Phuket, 17 August 2003.

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prepare, on voluntary basis, their selected individual action plans on human resources development to be called ECOTECH Action Plans (EAPs). The ESC was able also to establish the Human Capacity Building Coordinating Group (HCBCG) to prepare the first Human Capacity Building Strategy Report for APEC SOM. However, these activities fall under what are generally known as 'Type I Activities', that is activities that are initiated and implemented within the realm of APEC inter-governmental agencies and fora. In other words, these activities are what APEC officials and those who are formally related to it are doing with respect to ECOTECH agenda. Even in 2000, it was already decided this was not enough. ECOTECH activities should also include 'Type II Activities' where organisations or institutions outside proper official APEC governmental networks are invited to participate or engage in joint activities. In the beginning, many now well-known organisations such as the APEC Business Advisory Council (ABAC), the Pacific Economic Cooperation Council (PECC), and the APEC Study Centers (ASCs) have been invited to get involved in APEC ECOTECH activities, but now the list of important outside participants include several international financial institutions (IFIs) such as the World Bank, the Inter-American Development Bank (IADB), and the Asian Development Bank (ADB).

In a way, the engagement of these IFIs could be looked upon as a natural consequence of an event that is bound to happen sooner or later. The above named IFIs have been active in development lending within the Asia Pacific region for much longer than the life of APEC. But, as both APEC and these IFIs aim at the increased welfare or economic well-being of the people in the region through trade and investment, and general development efforts, the need to work together becomes even more imperative. However, some common working relations or *modus operandi* need to be established before such fruitful engagement could take place, and this may not be easy. For example, Andrew Elek, an expert on APEC, once said that, while the ADB and the World Bank were willing to become involved in principle, they could not be expected to respond to a 'shopping list' of hundreds of activities. [1] Engaging these institutions effectively will require a much sharper definition of priorities for capacity building.

In the four areas that form the short list of ECOTECH priorities endorsed by APEC SOM this year, namely the integration into the global economy, counter-terrorism capacity building, promoting the development of knowledge-based economy (KBE), and addressing the social dimension of globalisation, this paper addresses the issue of the linkage between third theme, promoting the development of KBE, and the main focus of activities of the three well-known IFIs, namely the WB, IADB, and ADB. The next section, Section 2, takes a brief look at the nature and requirements of a KBE in APEC. Then Section 3 analyses the main

[1] Andrew Elek, 'Promoting ECOTECH in APEC: Bridging the Digital Divide and Other Issues', Issues Paper prepared for the Foundation for Development Cooperation (FDC), Beijing, April 20, 2001.

missions of the said IFIs to see how APEC can interest them to get involved with APEC activities. Section 4 will attempt to establish a common ground for such a linkage, with some samples of activities. Finally, Section 5 concludes with recommendations on the what need to be done next.

## 2. The Nature and Requirements of a KBE, and Experience in APEC

There is already very rich knowledge and understanding of KBE in APEC. Since 2000, the APEC Economic Committee (EC) has conducted successive studies on KBE and its derivatives (such as problems and prospects of the New Economy and Digital Divide). [2] These studies have formed a basis under which various APEC Working Groups and forums have prepared their project proposals, and have these projects funded by the APEC Central Funds and other funding sources in the last several years.

In Box 1, the APEC Economic Committee has attempted to give a simple explanation to the meaning of a KBE. It is obvious that a KBE is an economy which needs and uses knowledge as the main driver of its growth and expansion. It has further clarified that this knowledge is more than just 'technological' knowledge but includes cultural, social, and managerial knowledge as well. However, what lies underneath this concept of knowledge did not get mentioned in the box, but appeared in other part of the EC 2000 Report. In other words, the most important precondition for a KBE is basic education. This is what lies underneath the fundamental concept of knowledge. As the EC puts it, basic education is a long-term investment, without which a KBE is unsustainable. It has further elaborated that in a fully developed KBE, high quality education services that are both widely available and widely used are a major priority for the economy and society, of which without this background it is virtually impossible to build the other elements of the national knowledge base (such as R&D) to the level needed by a KBE (see EC, 2000, p. xi).

Concurrently with the achievement in quality basic education, a KBE needs the use and mastery of information and communication technology (ICT). Again as the EC puts it, ICT can be seen as an enabling technology for a KBE. Advanced information systems bring down the cost of information, facilitate access to wider pools of information, and promote the spread of ideas. Moreover, a fully developed KBE has an advanced communications network and a policy and regulatory framework that encourages competition and supports the development and use of information hardware and applications. Finally, in order for a KBE to flourish, the social, political, economic and legal framework of the

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[2] The three successive studies by the EC are, for 2000, 'Towards Knowledge-Based Economies in APEC'; for 2001, 'The New Economy and APEC'; and for 2003, 'The New Economy in APEC: Innovations, Digital Divide and Policy'.

economy must support an open environment for trade and investment. Some even go further as to say that a KBE needs more than an open trade and investment system; it needs an open society where the creativity of the free people is at the heart of a productive KBE.

Beyond the above preconditions, several areas of activities in a fully developed KBE could be conceived. The APEC EC recommends four areas in which an advanced KBE could get involved in.

**(1)** Innovation systems: In this economy, innovation and technological change are pervasive, and are supported by an effective national innovation system (that is, a network of institutions in the public and private sector whose activities and interactions initiate, import, modify, and diffuse new technologies and practices).

**(2)** Human resources development: In this same economy, human resources development is also pervasive. Education and training are of high standard, widespread and continue throughout a person's working life.

**(3)** ICT infrastructure: An efficient infrastructure operates, particularly in ICT, which allows citizens and businesses to readily and affordably access pertinent information from around the world.

**(4)** Business environment: This is the economy where the business environment (that is, the economic and legal policies of government, and the mix of enterprises operating in the economy) is supportive of enterprises and innovation.

Table 1 sums up the policy framework that facilitates progress towards a KBE. Drawing on the four policy directions set out above, the EC further suggests directions of APEC action for each area that could be pursued through relevant APEC technical working groups and other APEC forums as follows:

**Business Environment**

The following three areas could be considered:

**(a)** Trade, Investment and Legal Systems: pursue multilateral agreements for FDI facilitation in the region, improving the level of automation of investment-related documentation, create an investment promotion body to generate and distribute 'best practices' in legal systems;

**(b)** E-Commerce: improve the level of related infrastructure in each economy, establish and coordinate legal systems pertaining to e-commerce, establish 'e-payment systems';

**(c)** Policy Coordination: improve the computerisation level within APEC economies and build a computer network among governments, improve efficiency in contents management through standardisation of ICT area, establish a broadband network in APEC using the World Wide Web, coordinate policies for promoting Small and Medium Enterprises (SMEs) in APEC economies, establish programs (including

education and training) to assist developing member economies to move towards KBEs.

**Innovation Systems**
Challenges which APEC members economies can address collectively include: cooperating in basic research, identifying and disseminating non-technology-based knowledge of developing economies to promote innovative systems of more developed economies, sharing best practices in strengthening innovation systems, enhancing networking between firms and public institutions, providing the right climate for business innovation, and creating an APEC system for promoting flows of knowledge about innovations and innovation systems.

**Human Resource Development (HRD)**
Potentially fruitful directions in which APEC's cooperative actions in HRD could be reinforced include: enhancing HRD assistance in developing economies through the internship of young IT experts from other economies; increasing assistance in training by large private companies (the 'Fortune 100 in APEC'); establishing a labour market information system and fostering linkages between learning and work, improving skill development through cooperation and participation; expanding e-education programs; and strengthening linkages between the APEC working groups on HRD and services.

**Information and Communication Technology (ICT)**
In order to close the knowledge gap among the APEC member economies, specific measures of cooperation in the area of ICT would be required, including: production of APEC ICT-related statistics; provision of a database of country-specific information; promoting the networking of medical and educational institutions; and effective propagation of the results of projects undertaken by APEC Telecommunications Working Group (through the proposed Knowledge Clearing House).

In the past few years, several APEC working groups and forums have undertaken several KBE projects. As can be seen from Table 2, most of these KBE activities were undertaken by the Telecommunications Working Group (12 out of 31 projects), followed by the Committee on Trade and Investment (CTI) (5 projects), the Human Resources Development Working Group (4 projects), the Transportation Working Group (3 projects), and so on. The pertinent question to be asked now is: How these activities can be linked up with the activities of the aforementioned IFIs? If such linkages cannot be established, it will be difficult to generate these Type II activities between these IFIs with the APEC process. It is imperative, therefore, that we understand the core activities of these IFIs before we consider any possibilities of their engagements.

## 3. Current Missions and Activities of IFIs

Of the three IFIs mentioned at the beginning of the paper, the International Bank for Reconstruction and Development (IBRD) or the World Bank (WB) is the most well known. And as an international development bank, what the World Bank does is also what the other two international development banks do, that is to mobilise savings of richer countries and lend it to poorer countries for investment in various sectors that will bring about faster and higher rates of economic growth and expansion, and subsequently greater income and welfare of their peoples. There are more IFIs that we could talk about, such as the International Monetary Fund (IMF), or the African Development Bank (AfDB), but since these IFIs either are not long-term development banks, or lie outside the general interest areas of the Asia Pacific, they will not be discussed here. [3]

It is not far from the truth to say that the recent financial and economic crisis in East Asia in late 1990s has helped reshape the goals and objectives of these IFIs. Despite the low interest charges that these international development banks levied on borrowers, these international development banks do not operate differently from any commercial banks in the sense that, finally, the whole operation must bring in profits. The performance records of these international development banks especially the World Bank have always been successful in the last several decades, yet several developing countries especially in Africa continue to suffer from lack of development despite high level of indebtedness. Even in the fast-growing and more prosperous East Asian region, the severe economic and social problems brought about by the financial and economic crisis in the late 1990s have prompted or forced these international development banks to reassess their goals and objectives. And almost by coincidence, they have arrived at one common and most important objective of their missions and operations: economic well-being of the people of which poverty reduction is a major component, along with other development goals such as sustainable economic growth and environment. To prove this point, we can look at the statements of missions of each of these international development banks.

**The World Bank**

Very succinctly, the World Bank states that its mission is to see a world without poverty. More exactly, the World Bank mission is to reduce poverty and improve living standards through sustainable growth and investment in people.

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[3] The main reason the IMF is not included in the discussion is because unlike the WB, the IMF provides short-term credit for member countries suffering from balance-of-payments problems. Although recently the IMF has extended its role beyond it short-term provision of balance-of-of-payments credit into development issues such as poverty reduction as well, there is no general agreement that this is appropriate. In fact, there is a great deal of debate on the role of the IMF vis-à-vis the World Bank on the handling of the recent East Asian financial crisis. Until there is greater acceptance otherwise, the role of the IMF is still limited to balance-of-payments problems financing rather than development financing.

**The Inter-American Development Bank**
The two main objectives of the IADB as set out in its institutional strategy are poverty reduction and social equity, and environmentally sustainable growth.

**The Asian Development Bank**
Equally succinct, the ADB's overarching goal is to reduce poverty and improve the quality of life of people in the Asia and Pacific region.

The arrival of this most important objective of economic well-being of the people (including poverty reduction and its subsidiary objective of reduced income inequality) is not by joint agreements of decisions, but from individual perception of the importance of this economic and social happening. Each organisation has also developed similar approaches or techniques that are likely to bring about the desired result of increased economic well-being and poverty alleviation. As the World Bank is the most established of these IFIs, perhaps it is appropriate to understand the approaches or techniques to increase economic well-being including poverty reduction of these IFIs by looking at what the World Bank has done in the past few years. [4]

First of all, the World Bank strongly believes that poverty reduction depends very much on sustained economic growth, and sustained economic growth is likely to be an outcome of two development efforts: (1) the creation of good investment climate whereby the private sector could invest and produce efficiently, in a way that generates jobs and productivity growth, [5] and (2) the empowerment and investment in the poor people so that they can participate in growth. [6] Along these two basic strategies, the World Bank can and do perform three functions: (a) provide development loans that aim towards the above two development efforts, (b) provide grants that will do the same as in (a), and (c) provide expertise through sector studies or analytical work that help the government in question to understand the problems and the ability to solve them. Additionally, another innovative activity by the World Bank recently has been the promotion of Poverty Reduction Strategy Paper (PRSP) whereby each country is encouraged to carry out poverty studies

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[4] Information for the following account is gathered from Ian Goldin, Halsey Rogers and Nicholas Stern in 'The Role and Effectiveness of Development Assistance: Lessons from World Bank Experience', a research paper from the Development Economics Vice Presidency of the World Bank, June 2002.

[5] According the World Bank, the investment climate consists of all the factors that most influence private-sector decisions: macroeconomic stability and openness, governance and institutions, and infrastructure. See Goldin, Rogers and Stern, 2002.

[6] Whereas good investment climate provides general conditions for poverty reduction, the government need to target poverty more directly, notably by equipping poor people with the tools necessary to contribute to growth, such as education and health, and by giving them access to infrastructure and financial services. Again according to Goldin, Rogers and Stern (2002), people are empowered when they are given the ability to shape their own lives, whether through greater capabilities or through participation in decision-making.

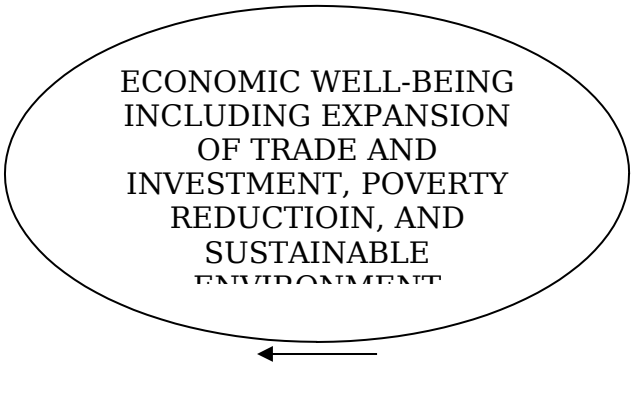
and how to solve poverty problems by engaging all the people in all sectors of the economy, so that once everyone 'owns' the project, the incentives to achieve the end results (poverty reduction) are much greater. These changes towards poverty reduction and its allied activities are also clear from the composition of lending categories. As can be seen from Table 3, the reduction in private sector and infrastructure development between 1961/70 and 1991/01 has been most dramatic. And equally dramatic are the increase in lending for human development network, of which education and health are the chief activities.

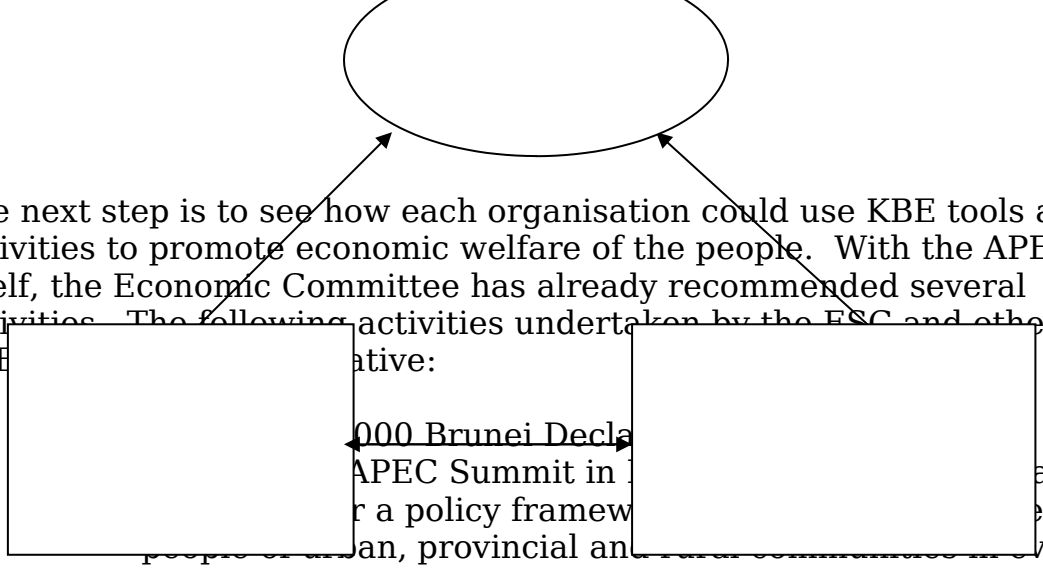
To conclude, the present focus of most of IFIs at least as represented by the work of the World Bank appears to be on one prominent theme of increased economic well-being especially poverty reduction. In APEC itself, it is already well-known that ECOTECH reflects the pursuit of APEC's common objectives and goals through cooperative activities to attain sustainable growth and equitable development, while reducing economic disparities among APEC economies and improving economic and social well-being. In short, both APEC and most IFIs have the same common goals. The pertinent question is how we can induce the two organisations to work more closely together so as to help accelerate the fulfilment of our goals. This is the subject of the next section.

## 4. Linkage Between APEC and IFIs

In Section 2, we have established that we can use, and indeed we have used, KBE tools and activities to achieve the goal of increased economic welfare and well-being of the people in the APEC region. The use of these KBE tools and activities could be the same means to arrive the same ends of increased people's welfare and well-being. As depicted in Figure 1, economic well-being is set at the top of diagram representing the common goal for both the APEC and the IFI. The horizontal arrow goes both ways between APEC and the IFIs, meaning that both organisations could support each other in their respective endeavour. The arrow then points upward to the same means of the use of KBE tools and activities to eventually achieving the ultimate goal of increased well-being of the people. This may require that we try to understand each other's approaches and activities, and help each other when necessary.

**Figure 1: Mechanism of Engagement of IFIs in APEC**





The next step is to see how each organisation could use KBE tools and activities to promote economic welfare of the people. With the APEC itself, the Economic Committee has already recommended several activities. The following activities undertaken by the ESC and other APEC initiative:

2000 Brunei Decla
APEC Summit in
aders
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people of urban, provincial and rural communities in every economy in APEC to have individual or community-based access to information and services offered via the internet by the year 2010. And as a first step toward this goal, the Leaders aimed to triple the number of people within the region with individual or community-based access by 2005. This is a very clear indication of how important this ICT is to the life of modern people in the future.

(b) The e-APEC Strategy

In the 2001 Leaders' Declaration in Shanghai we have seen the launch of the e-APEC Strategy which is a forward-looking, long-term and action-oriented plan to do three things: one, to create an environment for strengthening market structure and institutions; two, to facilitate an environment for infrastructure investment and technology development; and three, to enhance human capacity building and promote entrepreneurship. Although it seems that the weight or focus of this plan swings more toward the first objective of economic efficiency in the macroeconomy, the reference to technology development and human resources development especially through ICT is within the purview of economic and technical cooperation (ECOTECH) in APEC, and community building in PECC.

(c) Other APEC Initiatives

There are several other APEC initiatives that can be qualified as ICT-based activities. The e-commerce activities under the special E-Commerce Steering Group (ECSG) have gone a long way toward trade without paper and trade without paper money. The e-government activities under the APEC Telecommunications Working Group have become widespread which increase the ease and efficiency with which the government can interact with its citizens and taxpayers, and vice versa. Many innovative activities under this e-government can be seen in many economies such as the practice of e-procurement and e-taxation. This year (2003), China and Thailand proposed a project called 'Innovative APEC' with an aim to help develop science and technology intermediary mechanisms within the APEC region

through seminars, workshops, networking, training and joint research that will make APEC members 'innovative'. This project proposal has already received approval from the Budget and Management Committee of APEC.

(d) PECC Initiated Activities

As an official observer of APEC, the Pacific Economic Cooperation Council (PECC) has worked closely with APEC. Currently, many PECC members have been involved in many initiatives or activities that incorporate ICT. For example, Japan PECC has suggested that the PECC Telecommunications and Information Industry Forum (PECC TIIF) be restructured as a new taskforce under the CBF to be called 'PECC Networked Economies Taskforce' or 'PECC Net'. There is another activity organised under the aegis of PECC called 'EduPACT' based in the US which focuses on the promotion of IT literacy and skills in the Asia Pacific region. At the APEC TEL27 just concluded in Kuala Lumpur, one more project was submitted for consideration and was strongly supported. This is the 'E-University Network in HRD for E-Government Project' proposed by Japan PECC with Thailand as co-sponsor. This project aims to use university network in PECC to help train senior government officials and high-level executives on their capability in implementing e-government activities.

These above activities are basically KBE activities that may contribute indirectly to increased economic welfare and poverty reduction of the people. It is possible that we could design a set of policies or measures that have a direct bearing on, say, poverty reduction among the people. As an example, the National Electronic and Computer Technology Center (NECTEC) of Thailand has recently conceived a project that exactly addresses this issue. It wants to find out how the use of ICT could be made to help several groups of people in Thailand, especially people who live in the rural areas to improve their livelihood and thus reduce their poverty. Table 4 sums up some existing or on-going projects. NECTEC is currently planning to extend its ICT for Poverty Reduction program to cover a much wider group of activities. Once completed, it will be the leader for the use of ICT, not just for the improvement or progress of Thailand as a KBE, but also for the further reduction of poverty in the country. This is the type of linkages that can be generated between APEC members and the IFIs such as the World Bank, the Inter-American Development Bank and the Asian Development Bank.

## 5. Concluding Remarks

In this paper, we have demonstrated that modern economies in the increasingly globalised world must try to make better uses of existing knowledge and technology, and must be able to adapt, adopt, or generate

their own knowledge in order to survive and prosper. But while various attempts to use various tools such as the ICT to make the economy the knowledge-based economy (KBE), one must not lose sight of the fact that the APEC's Bogor Goals must also lead towards increased economic well-being and poverty reduction among the people. It is through these KBE activities and their ability to lead to increased welfare and poverty reduction that provide the necessary nexus or linkage for APEC economies or its various forums such as the ESC to work with international financial institutions (IFIs) such as the World Bank, the Inter-American Development Bank, and the Asian Development Bank. On the part of APEC, perhaps there is little need to launch a new search for KBE activities that have direct effects on increased economic welfare and poverty reduction as existing KBE activities may already have indirect effects on increased economic welfare and poverty reduction. For example, students who are able to use ICT knowledge and techniques will stand a better chance to benefit more from modern economy, resulting in better income and less chance to fall into poverty. Even easier to see is the case where a disabled person could avoid poverty if he or she is able to use ICT as a tools of employment.

The existing concern seems to be that many APEC forums are uncertain about how to work together with these IFIs. This is a valid concern as the APEC process is just beginning to be exposed to Type II activities with outsiders, and not everyone knows how to go about doing it yet. Equally of concern is the uncertainty of how these IFIs would react once the engagement has been made. However, it is interesting to point out also that there is also a reciprocal gesture from these IFIs to reach out and work more closely with other organisations or institutions having similar objectives. At the meeting in Prague in September 2000, the Board of Governors of the World Bank endorsed a focused set of priorities for Bank global programs, and these are reflected in the criteria for possible Bank action in global public goods:

- That the actions provide clear added value to the Bank's development objectives at the country level;
- That the global actions by the bank catalyse resources and build collaborative partnerships;
- That the Bank actions play to its comparative advantage; and
- That there is an emerging international consensus that calls for global action.

Using these criteria, the Bank has identified five priority areas for global public goods, namely:

- Communicable diseases
- Environmental commons
- Information and knowledge
- Trade and integration, and
- International financial architecture

These priorities and criteria now need to be incorporated by the Bank in a global strategy for the institution that can guide its global programs, much as—at the country level—the country assistance strategy guides its country programs. As is the case at the country level, this strategy needs to evolve in close consultation with the relevant stakeholders. [7]

In all, it can be summarised that there exists an exciting opportunity for the IFIs and APEC to work together for the betterment of the life of the people in the Asia Pacific region and achieving the Bogor Goals. In this particular area of the use of KBE tools and activities, increased economic welfare and poverty reduction could be directly and indirectly effected so that the joints efforts can bring about greater outcome than if each is acting alone. Contrary to what many people might have feared, the relationships between APEC economies and these IFIs have gone beyond the patron-client association or aid donor-recipient makeup. The use of ICT which has become more widespread as a result of recent freer and less restricted trade increases both the capability of the people to be more productive in their livelihood and the efficiency of the system they are living and working in.

[7] Information from Goldin, Rogers and Stern (2002), pp. 66-67.

***Box 1: What is a Knowledge-Based Economy (KBE)?***

A *Knowledge-Based Economy* is an economy in which the production, distribution, and use of knowledge is the main driver of growth, wealth creation and employment across all industries.

In this context, being a KBE means more than simply having a thriving "new economy" or "information economy" that is somehow separate from a stagnant "old economy". In a truly knowledge-based economy, all sectors have become knowledge-intensive, not just those usually called "high technology".

Important features of an ideal KBE include: an openness to trade, new ideas and new enterprises; sound macroeconomic policy; the importance attached to education and lifelong learning; and the enabling role of information and telecommunications infrastructure.

Note that the knowledge required by a knowledge-based society is wider than purely technological knowledge; for example, it includes cultural, social, and managerial knowledge. The knowledge possessed by an organisation is much more than the information written in its files, and includes its culture, the way in which people interact within the organisation, knowledge about the contacts they use to gain information from outside, and so on. The organisation's knowledge consists of its capability in integrating information with experience and expertise to take action. This assimilation is no mean feat; as one wit put it: "Today we are drowning in information but starving for knowledge".

Source: Reproduced from APEC EC, 'Towards Knowledge-Based Economies in APEC', November 2000, p. vii.

**Table 1: Policy Framework to Facilitate the Progress Towards a Knowledge-Based Economy**

| Innovation Systems | Human Resources Development | Business Environment | ICT Infrastructure |
|---|---|---|---|
| - The science system and investment in basic research | - Level of basic education of population | - Regulatory environment | - Investment in ICT |
| - Promoting R&D | - Pool of scientific and engineering talent | - Intellectual property rights | - Building digital networks |
| - Diffusion of technology | - Lifelong learning | - Competition policy | - Increased access and use of ICTs |
| - M&E investment | - Job training | - Role of the financial markets and corporate governance | - Growth of electronic commerce and enterprises |
| - Openness to international trade and investment | - Organisational innovation | - Internationally competitive personal and corporate tax rates | |
| - Science/industry links | - Continuing education | - Macroeconomic fundamentals | |
| - Networking and collaboration | - Distance education | - Physical infrastructure | |
| - Financing of new technology-based firms | | | |
| - Clusters | | | |

Source: Adapted from the Economic Committee (EC), Towards Knowledge-Based Economies in APEC, Report by APEC Economic Committee, November 2000.

**Table 2: Selected APEC Projects on Knowledge-Based Economy**

| No. | Project Number | Project Name |
|---|---|---|
| 1 | TEL 03/1998 | Interactive Medical Curriculum Pilot Project |
| 2 | TEL 04/1998 | Telecommunication Training Pilot Project |
| 3 | TEL 01/1999 | APEC Distance Learning Project |
| 4 | TEL 03/1999 | Symposium for Collaborative Strategies for Multimedia and World Wide Web Skills Development |
| 5 | TEL 02/2000 | Interconnection Resources Project |
| 6 | TEL 03/2000 | Distance Learning Training Courses Project |
| 7 | TEL 04/2000 | APEC Distance Learning Project on Basic Telecommunications Technology |
| 8 | TEL 02/2001 | Distance Learning Strategic Needs Analysis |
| 9 | TEL 01/2001T | Electronic Commerce Capacity Building |
| 10 | TEL 02/2002 | APEC Distance Learning Project on Telecommunications Technology |
| 11 | TEL 02/2003 | Research into Electronic Commerce Strategies for Rural SMEs in APEC |
| 12 | TEL 03/2003 | Overview of Internet Protocol version 6 (IPv6): Bridging the Digital Divide |
| 13 | CTI 23/2000T | Business-to-Government (B2G) e-Service Website for Post-Market Surveillance of SdoC |
| 14 | CTI 02/2001T | SCCP Program to Implement Risk Management |
| 15 | CTI 03/2002 | Revision of the website version of ‘a guide to arbitration and dispute resolution in APEC member economies’ |
| 16 | CTI 02/2003 | Publication of the 5th Edition of the APEC Investment Guidebook |
| 17 | CTI 03/2003T | Towards a Cross-Border Paperless Trading Environment —Actions for Trade Facilitation |
| 18 | HRD 01/1996 | Lifelong Learning Project |
| 19 | HRD 05/1998 | Internet and Electronic Commerce: Training Based on Java Technology in APEC |
| 20 | HRD 01/1999 | Maintenance of the APEC LMI Database |
| 21 | HRD 11/2002 | APEC Network of Skills Development Center |
| 22 | TPT 01/2000T | Pilot Electronic Commerce Training in Maritime Transport |
| 23 | TPT 01/2001T | APEC Paperless Trading Demonstration Project— Electronic Transmission on the SANCRT Message |
| 24 | TPT 02/2001T | Electronic Port Manifests Project |
| 25 | ATC 01/1999S | Agricultural Technology Transfer and Training |
| 26 | ATC 01/2000 | APEC Institutional Linkage for Human Resources Development in Postharvest Technology |
| 27 | EWG 03/1999T | Comprehensive linked database on mining and energy related legal framework within APEC Member Economies—Extension of Phase 2 |
| 28 | EWG 03/2002T | Measuring the impacts of new economy technologies on the energy sector in APEC economies |
| 29 | SOM 01/2001T | Transforming the Digital Divide into a Digital Opportunity Phase 1: Symposium and Workshops |
| 30 | EC 05/1999S | Promotion of Knowledge-Based Industries (KBIs) in |

| | | |
|---|---|---|
| | | APEC Region |
| 31 | IST 01/1998 | Establishing APEC Center for Technology Foresight—Phase 1 |

Source: Compilation from the APEC Secretariat's Website by Division of International Economic Policy, Thailand's Ministry of Foreign Affairs, 7 May 2003.

**Table 3: Percentage Share of Total Lending by Network (Type of Lending)**

| | 1961/70 | 1991/2001 |
|---|---|---|
| | | |
| 1. Human Development (HD) Network: Education and Health | 3.0 | 19.0 |
| 2. Environment and Social Sustainable Development (ESSD): Environment, Agriculture, Rural Development and Social Protection | 13.0 | 15.0 |
| 3. Financial Sector Network (FSN) | 9.0 | 9.0 |
| 4. Poverty Reduction and Economic Management (PREM): Governance, Public Sector, Gender and Economic Policy | 5.0 | 9.0 |
| 5. Private Sector and Infrastructure (PSI): Infrastructure, Extractive Industries and Private Sector Development | 70.0 | 38.0 |
| | | |
| Total | 100.0 | 100.0 |

Source: Approximate from Figure 4.3 in Goldin, Rogers and Stern (2002).

**Table 4: ICT for Poverty Reduction, Thailand**

| **Project Name** | **Goal or Rationale** | **How Related to Poverty Reduction?** |
|---|---|---|
| | | |
| 1. SchoolNet Thailand | To link all schools in Thailand with internet systems. | Students who are able to learn from the vast educational resources of the internet have a better chance of employment and economic success in life |
| 2. Agricultural Information Network (AIN) | To develop agricultural information systems that can be used in and for agricultural production, agricultural management, and community development | When farmers can access and use necessary information for their production, management and marketing, their income should increase and risks reduced, resulting poverty reduction. |
| 3. Community Access Telecenters in Thailand | To assist community centers throughout Thailand to link up among themselves and with the outside world | A more open and more knowledgeable community could help its members to cope better with external changes and benefit from increased personal and community capability. |
| 4. Data Warehouse for Community Products | To systematically catalogue various products of community throughout Thailand for efficient trade and services | Increased trade in goods and services at the community level will bring in more income to community members, thus reducing existing poverty. |
| 5. Automatic Web Translation Services | To provide machine translation (MT) between English and Thai through the internet | Ability to use English is still limited among most Thais especially in the rural areas. This service could help many rural people with language problems to use the internet more profitably. |
| 6. Rural Telephone | To provide one of the most important communication | Telephone services could bring in faster agricultural information, and facilitate and accelerate rural trade which should bring in greater rural |

| | | |
|---|---|---|
| | channel for people in the rural areas of Thailand | prosperity and less rural poverty. |

Source: Thailand's National Electronics and Computer Technology Center (NECTEC), ***ICT for Poverty Reduction: Examples of Programs/Projects in Thailand***, Bangkok, July 2002.